

Remarks

Entry of the amendments, reconsideration of the application, as amended, and allowance of all pending claims are respectfully requested. Claims 1-16 are pending.

Applicants have herein amended independent claims 1 & 11 to more particularly point out and distinctly claim certain features of applicants' invention. However, no admission is made by these amendments as to the propriety of the rejections against the originally stated independent claims. Support for these amendments can be found throughout the application (see, e.g., p. 1, lines 8-10; and p. 11, lines 3-8 of applicants' specification). Further, dependent claims 3 & 4 are amended herein to clarify language in those claims. Support for these amendments can be found throughout the application. Further, new claims 13-16 are added herein. For support, see, for example, p. 16, lines 3-9; p. 17, lines 4-7; and p. 18, lines 1-12 (see also p. 7, lines 18-23; p. 10, lines 14-18 and p. 11, lines 3-8) of applicants' specification. Thus, no new matter is added by the amendment presented herewith.

In the Office Action dated September 22, 2003, the abstract of the disclosure is objected to because of the use of legal phraseology and because the abstract contained more than one paragraph. In response, applicants submit the amended abstract provided herewith.

Relative to 35 U.S.C. 112, second paragraph, the Office Action states that the phrase "such as" in claim 11 renders the claim indefinite. In response, applicants submit amended claim 11 and new claim 13.

Substantively, claims 1, 2, 5-7, 9, 11 & 12 were rejected under 35 U.S.C. 102(e) as being anticipated by Wilkinson et al. (U.S. Patent No. 6,308,317; hereinafter, "Wilkinson") and claims 3, 4, 8 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilkinson in view of Sherer et al. (U.S. Patent No. 5,459,854; hereinafter, "Sherer"). Applicants respectfully, but most strenuously, traverse these rejections for the reasons stated below.

In one aspect, applicants' invention is directed to the provision of software components for modular software development of a software application such that the components can be updated or supplemented. For example, in independent claim 1, applicants claim a method of

providing a set of software components for component-oriented software development. The method includes, for instance, (1) providing a set of software components out of which a software application to be executed by an apparatus comprising processor means and memory means can be partly or entirely assembled; (2) assigning a different numeric identifier to each component of the set of software components; and (3) storing each assigned numeric identifier in the corresponding component. Thus, in applicants' claimed invention, each component in the set of software components is assigned a different numeric identifier. These aspects are very different from the teachings of Wilkinson.

For instance, Wilkinson discloses a technique for loading new applications onto a smart card without compromising the security of the smart card (col. 3, lines 60-62). There is no discussion in Wilkinson of applicants' claimed feature of assigning a different numeric identifier to each component of the set of software components. Wilkinson does describe ID numbers at col. 9, lines 29-41. However, this section describes ID numbers associated with string patterns (not components) in an aggregate class constant pool. This association with strings is clear at col. 9, lines 29-33, which states, "This compaction is achieved by mapping all the strings found in the class file constant pool into integers...These integers are referred to as IDs." Since an ID number in Wilkinson is associated with a pattern instead of a component, applicants respectfully submit that this ID number does not teach or suggest assigning a different numeric identifier to each component of the set of software components, as recited in the claims presented herewith.

The Office Action cited col. 9, lines 32-40 of Wilkinson as disclosing applicants' claimed feature of assigning a different numeric identifier to each component of the set of software components. As noted above, this section of Wilkinson describes each ID number being associated with a string pattern in a class constant pool, which is different from assigning an identifier to a single component. Thus, applicants respectfully submit the generation of these ID numbers in Wilkinson do not teach or suggest the assigning of a different numeric identifier to each component of a set of software components, as claimed by the present invention.

Further, the Office Action supported the rejection of the independent claims by citing FIGs. 13 and 14. FIG. 13 depicts card applications in communication with an application in a terminal. The discussion of FIG. 13 at col. 12, lines 15-47 describes this communication, but

does not describe or suggest the assigning of a numeric identifier to a software component. Further, FIG. 14 depicts the memory organization for ROM, RAM and EEPROM. The storage of the card applications in this memory is depicted in FIG. 14 and described at col. 12, line 49 – col. 13, line 44. This discussion of the storage of a card application in Wilkinson does not teach or suggest the assigning of a different numeric identifier to each component of a set of software components, as claimed by the present invention.

Since Wilkinson fails to teach or suggest applicants' claimed feature of assigning different numeric identifiers to each component of a set of software components, applicants respectfully submit that Wilkinson does not anticipate applicants' claimed invention. Thus, applicants respectfully request an indication of allowability for independent claims 1 & 11.

The remaining applied art, Sherer, fails alone or in combination with Wilkinson to teach or suggest the above-noted deficiency of Wilkinson when applied against the independent claims presented. Sherer is cited in the Office Action for various aspects of applicants' invention recited in certain dependent claims at issue. For the reasons noted above, applicants respectfully submit that the independent claims presented patentably distinguish over the applied art. The dependent claims at issue are believed allowable for the same reasons as the independent claims from which they directly or ultimately depend, as well as for their own additional characterizations.

New dependent claim 13 is added herein to further characterize the device recited in claim 11 as being at least one of a chip card, a Java Card, a set-top box and a Personal Digital Assistant. This new claim incorporates the subject matter deleted from claim 11 in response to the 35 U.S.C. 112, second paragraph rejection discussed above. The subject matter is recited in claim 13 without the "such as" phrase noted above relative to 112 rejection. For the reasons noted above relative to the independent claims, applicants request allowance of claim 13.

New dependent claims 14 & 15 recite the method of claim 1 and the device of claim 11, respectively, wherein the set of software components is capable of at least one of being, subsequent to being partly or entirely assembled into the software application, updated by updating at least one software component of the set of software components and supplemented by adding at least one software component to the set of software components. Thus, in

applicants' claimed invention, the set of software components is capable of being updated or supplemented after the software application is assembled out of the set of software components. This is very different from the teachings of Wilkinson and Sherer, either alone or in combination.

For instance, there is no discussion in Wilkinson of updating or supplementing the application at the component-level of the application. Wilkinson simply does not address smart card functionality at that level of granularity (see, e.g., applications depicted in FIGs. 12-14 without indicating any components thereof). Instead, Wilkinson is directed to the update of the smart card only through the addition of a new application as a whole (col. 3, line 59 – col. 4, line 8; see also FIG. 14). This addition of a new application in Wilkinson updates the smart card, which is different from updating an application. There is no teaching or suggestion of a set of software components capable of being updated and/or supplemented, let alone capable of being updated and/or supplemented subsequent to being partly or entirely assembled into a software application, as recited by the claims presented herewith.

Sherer also fails to teach or suggest the recited capabilities of the set of software components as described above. Applicants respectfully submit that Sherer does not discuss assembly of a software application from software components at all, much less address a set of software components capable of being updated and/or supplemented subsequent to being partly or entirely assembled into a software application. Therefore, it follows that Sherer does not teach or suggest the above-noted capabilities of the set of software components, as claimed by the present invention.

Since both Wilkinson and Sherer fail to teach or suggest the above-described claimed feature relative to the capabilities of the set of software components, applicants respectfully submit that the combination also fails to teach or suggest this claimed feature. Therefore, applicants respectfully request an indication of allowability for claims 14 & 15.

New dependent claim 16 further recites providing the apparatus with a limited Java Virtual Machine (JVM) being able to execute only a subset of Java instructions, and accessing, by the apparatus, a full JVM residing at a computing unit coupled to the apparatus, the accessing allowing the apparatus to execute additional Java instructions. Applicants respectfully submit

that Wilkinson and Sherer fail to teach or suggest the recited features of claim 16, either alone or in combination.

For example, Wilkinson discloses an integrated circuit card implementing a limited JVM. This implementation in Wilkinson allows programmers to program in a subset of Java instructions while maintaining compatibility with existing full JVMs (see col. 13, lines 13-27 thereof). This compatibility merely ensures that a device that includes a full JVM can execute a card's program that is written using only the subset of Java instructions. There is no discussion or suggestion in Wilkinson that the compatibility works in the other direction. That is, the card in Wilkinson does not have the capability to execute Java instructions of a full JVM, wherein the instructions are in addition to those in the subset of Java instructions. Applicants respectfully submit that this is different from an apparatus (e.g., card) provided with a limited JVM accessing a full JVM residing at a computing unit coupled to the apparatus, wherein the accessing allows the apparatus to execute additional Java instructions, as recited by claim 16.

Sherer, like Wilkinson, does not teach or suggest the above-described feature recited in claim 16. A careful reading of Sherer fails to uncover any discussion of Java instructions or of a limited or full JVM, let alone the above-described accessing of a full JVM by an apparatus provided with a limited JVM.

Based on the foregoing, applicants respectfully submit that the subject matter of claim 16 patentably distinguishes over the applied art. Thus, an indication of allowability of claim 16 is respectfully requested.

All pending claims are believed to be in condition for allowance and such action is respectfully requested.

Should the Examiner wish to discuss this case with applicants' attorney, please contact applicants' attorney at the below-listed number.

Respectfully submitted,

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